

IN THE CLAIMS:

1 1. (CURRENTLY AMENDED) A method of operating a switch for frames in a computer
2 network, comprising:

3 receiving a frame (~~the~~ received frame) at a port of said switch, said received
4 frame containing one or more indicia of frame type ~~designation~~, said one or more indicia
5 of frame type including an indicia of a protocol type;

6 accessing a virtual local area network (VLAN) value associated with the port;

7 deriving a virtual local area network (derived VLAN) value in response to said
8 one or more indicia of frame type ~~designation~~ and said VLAN value, said derived VLAN
9 value for use internal to said switch;

10 accessing a forwarding data base with said derived VLAN value to determine a
11 destination address; and,

12 forwarding, in response to said derived VLAN value, said received frame to an
13 output port for transmission to the destination address.

1 2. (CURRENTLY AMENDED) The method of claim 1 further comprising, said for-
2 warding step forwarding in response to said derived VLAN value and said destination
3 address.

4 3. (CANCELLED)

1 4. (CURRENTLY AMENDED) The method of claim 1 wherein said indicia of frame
2 type ~~designation~~ further comprises:
3 a subnet value.

1 5. (CANCELLED)

1 6. (CURRENTLY AMENDED) The method of claim 1 wherein said indicia of frame
2 type ~~designation~~ further comprises: an IP source address.

1 7. (CURRENTLY AMENDED) The method of claim 1 wherein said indicia of frame
2 type ~~designation~~ further comprises:
3 an index value associated with a port at which said received frame was received.

1 8. (ORIGINAL) The method of claim 1 further comprising:
2 deriving a MAC address from said derived VLAN value and forwarding said re-
3 ceived frame to a port for transmission to a destination having said MAC address.

1 9. (CURRENTLY AMENDED) An apparatus switch to forward frames in a computer
2 network, comprising:
3 a port to receive a frame (~~the received frame~~), said port associated with a virtual
4 local area network (VLAN) value, said received frame containing one or more indicia of
5 frame type ~~designation~~, said one or more indicia of frame type including an indicia of a
6 protocol type;
7 a parsing engine to derive a virtual local area network (derived VLAN) value in
8 response to said one or more indicia of frame type ~~designation~~ and said VLAN value,
9 said derived VLAN for use internal to said switch;
10 a forwarding data base configured to use ~~having~~ said derived VLAN value as an
11 input and to yield a destination address as an output; and,
12 an output port to transmit said received frame, in response to said derived VLAN
13 value, ~~for transmission to said destination address~~.

1 10. (ORIGINAL) The apparatus as in claim 9 further comprising:
2 a forwarding engine for forwarding said received frame in response to said de-
3 rived VLAN value and said destination address.

1 11. (CURRENTLY AMENDED) A computer readable media containing instructions for
2 the practice of operating a switch for frames in a computer network, comprising:
3 receiving a frame (~~the received frame~~) at a port of said switch, said received
4 frame containing one or more indicia of frame type ~~designation~~, said one or more indicia
5 of frame type including an indicia of a protocol type;
6 accessing a virtual local area network (VLAN) value associated with the port;
7 deriving a virtual local area network (derived VLAN) value in response to said
8 one or more indicia of frame type ~~designation~~ and said VLAN value, said derived VLAN
9 value for use internal to said switch;
10 accessing a forwarding data base with said derived VLAN value to determine a
11 destination address; and,
12 forwarding, in response to said derived VLAN value, said received frame to an
13 output port for transmission to the destination address.

1 12. (CANCELLED)

1 13. (CURRENTLY AMENDED) A method of operating a switch for frames in a com-
2 puter network, comprising:
3 using one or more indicia of frame type ~~designation~~ found in a received frame to
4 derive a virtual local area network (derived VLAN) value, said derived VLAN value used

5 | internal to said switch, said derived VLAN value different from a VLAN value associated
6 | the frame external to the switch; and
7 | using the derived VLAN value in making forwarding decisions.

1 | 14. (ORIGINAL) The method of claim 13 further comprising:
2 | controlling broadcast domains in the computer network by forwarding in response
3 | to the derived VLAN value.

1 | 15. (PREVIOUSLY PRESENTED) The method of claim 13 further comprising:
2 | using an indicia of a receiving port in constructing the derived VLAN value.

1 | 16. (CURRENTLY AMENDED) A computer readable media containing instructions for
2 | the practice of operating a switch for frames in a computer network, comprising:
3 | using one or more indicia of frame type ~~designation~~ found in the received frame
4 | to derive a virtual local area network (derived VLAN) value, said derived VLAN used
5 | internal to said switch, said derived VLAN value different from a VLAN value associated
6 | the frame external to the switch; and
7 | using the derived VLAN value in making forwarding decisions.

1 | 17. (CANCELLED)

1 | 18. (CURRENTLY AMENDED) A method of operating a switch for frames in a com-
2 | puter network, comprising:

3 receiving a frame (~~the received frame~~) at a port of said switch, said received
4 frame containing one or more indicia of frame type ~~designation~~, said one or more indicia
5 of frame type including an indicia of a protocol type;
6 accessing a port index value associated with the port;
7 deriving a virtual local area network (derived VLAN) value in response to said
8 one or more indicia of frame type ~~designation~~ and said port index value;
9 accessing a forwarding data base with said derived VLAN value to determine a
10 destination address; and,
11 forwarding, in response to said derived VLAN value, said received frame to an
12 output port for transmission to the destination address.

1 19. (CURRENTLY AMENDED) An apparatus ~~switch~~ to forward frames in a computer
2 network, comprising:
3 a port to receive a frame (~~the received frame~~), said port associated with a index
4 value, said received frame containing one or more indicia of frame type ~~designation~~, said
5 one or more indicia of frame type including an indicia of a protocol type;
6 a parsing engine to derive a virtual local area network (derived VLAN) value in
7 response to said one or more indicia of frame type ~~designation~~ and said index value;
8 a forwarding data base ~~having configured to use~~ said derived VLAN value as in-
9 put and to yield a destination address as output; and,
10 an output port to transmit said received frame, in response to said derived VLAN
11 value, ~~for transmission~~ to said destination address.

1 20. (CURRENTLY AMENDED) An apparatus to forward frames in a computer network,
2 comprising:

3 means for receiving a frame (~~the received frame~~) ~~at a port of said switch~~, said re-
4 ceived frame containing one or more indicia of frame type ~~designation~~, said one or more
5 indicia of frame type including an indicia of a protocol type;

6 means for accessing a index value associated with the means for receiving a
7 frame;

8 means for deriving a virtual local area network (derived VLAN) value in response
9 to said one or more indicia of frame type ~~designation~~ and said index value;

10 means for accessing a forwarding data base with said derived VLAN value to de-
11 termine a destination address; and,

12 means for forwarding, in response to said derived VLAN value, said received
13 frame to an output port for transmission to the destination.

1 21-23. (CANCELLED)

1 24. (NEW) The method of claim 1 wherein the step of deriving further comprises:

2 generating a protocol code from the indicia of protocol type;

3 combining the protocol code with the VLAN value to produce a mapping address;

4 and

5 accessing a memory structure with the mapping address to obtain the derived

6 VLAN value.

1 25. (NEW) The method of claim 1 wherein the indicia of protocol type indicates an
2 Internet Protocol (IP) protocol type.

- 1 26. (NEW) The apparatus as in claim 9 further comprising:
2 a protocol mapping table to map the indicia of protocol type to a protocol code;
3 and
4 wherein the parsing engine is configured to combine the protocol code with the
5 VLAN value to produce a mapping address and to access a memory structure with the
6 mapping address to obtain the derived VLAN.
- 1 27. (NEW) The apparatus as in claim 9 wherein the indicia of protocol type indicates an
2 Internet Protocol (IP) protocol type.
- 1 28. (NEW) The method of claim 18 wherein the step of deriving further comprises:
2 generating a protocol code from the indicia of protocol type;
3 combining the protocol code with the index value to produce a mapping address;
4 and
5 accessing a memory structure with the mapping address to obtain the derived
6 VLAN.
- 1 29. (NEW) The method of claim 18 wherein the indicia of protocol type indicates an
2 Internet Protocol (IP) protocol type.
- 1 30. (NEW) The apparatus as in claim 19 further comprising:
2 a protocol mapping table to map the indicia of protocol type to a protocol code;
3 and
4 wherein the parsing engine is configured to combine the protocol code with the
5 index value to produce a mapping address and to access a memory structure with the
6 mapping address to obtain the derived VLAN.

- 1 31. (NEW) The apparatus as in claim 19 wherein the indicia of protocol type indicates
- 2 an Internet Protocol (IP) protocol type.